WESTERN FARMER & GARDENER.

"THE PROFIT OF THE EARTH IS FOR ALL; THE KING HIMSELF IS SERVED BY THE FIELD."—*Eccles* 5-9.

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WESTERN FARMER AND GARDENER.

HENRY WARD [illegible], Editor.

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Mr. BEECHER has returned, and will resume the editorship of the Farmer and Gardener.

COMMUNICATIONS.

TO CURE THE SCRATCHES.

Mix white lead (ground in oil) with sufficient fish-oil to reduce the mass to the consistence of hog's lard. Wash the sore thoroughly with a strong soap-suds and then apply the lead and oil freely. Three or four applications (taking care to wash the sore before each application) will cure the most inveterate case. FACT.

SELECTIONS.

STUDY THE SOIL.

There are many substances in all good soils which every farmer ought to study till he fully understands their nature and properties. First among these is the abundant mineral called *silica*, or pure flint sand. This earth has many interesting and important properties. It is usually from ten to fifteen times more abundant in all soils than any other mineral. After the organized matter is removed from a soil by burning it at a red heat, it is not uncommon to find nine-tenths of the earth that remains, nothing but pure silica; the other tenth anumina, iron, lime, magnesia, soda, potash, manganese, and carbonic, sulphuric, phosphoric, and hydrochloric acids. Pure siliceous sand is also an *acid*, having 50 parts of oxygen united to 48 of a metallic base called *silicum* or *silicon*. When ground down to an impalpable powder, (as some of it is in all soils,) silica is sparingly soluble in water. If the water be warm like a summer shower, and especially if it contain a little potash or soda, or both in solution, silica dissolves easier and more abundantly. The quantity of dissolved flint that finds its way through the roots of wheat, corn, timothy, and other plants, into their stems, much larger than most grain and grass-growers are aware of. Wheat straw usually contains about 67 per cent. of this mineral in its ash.

The most interesting practical question in regard to silica or flint sand is the fact that, the alkalies potash or soda seem to be indispensable to convert it into an available food for the growth of plants. These alkalies exist more or less in the ashes or earthy portion of all plants. Being extremely soluble in sandy, pervious soils, they are apt to be leached out by tillage, and the land is rendered sterile, unless often laid down to grass, and rennovated by the application of wood ashes, *salt*, gypsum, and lime, and their equivalents in stable manure.

Alumina is the next most abundant mineral usually found in all soils. Unlike silica, it has alkaline properties. Like potash, soda, lime, and magnesia, it is the *oxide* of a metal, or a metal combined chemically with oxygen. The metal is called *aluminum*, of which there is about 53 parts to 47 oxygen in pure alumina. This earth combines chemically with the acid silica and forms the pure porcelain clay, from which translucent china ware is manufactured. Alum is a compound salt formed by the union of sulphuric acid (oil of vitriol) with alumina and potash. Alumina does not enter plants, and form a necessary constituent in their organization. Only traces of it have been found in their ashes. It exercises an important office, however, in all fertile soils by increasing their capacity to absorb and retain moisture and nutritive gasses about the roots of vegetables. A soil that contained no alumina would be radically defective. It gives adhesiveness and plasticity to all clays. Without it, the valuable salts of potash, soda, lime, iron, &c. would remain but a short time in the surface soil, and within the reach of plants. Phosphoric acid is often combined with alumina. Throwing the organic matter out of the account, and the eighty or ninety specimens of soil analysed in the laboratory of the writer within the last year, have contained on an average from four to seven per cent. of this mineral.

The next most abundant substance in the soils of Western New York after silica and alumina, is *iron*. Like those just named, this metal is combined with oxygen forming the red rust of iron. This is called in the language of chemists the "*per*-oxide of iron." When a bar of iron is heated in a blacksmith's forge and hammered, the thin scales that fly off are called the *prot*-oxide of iron. The difference between these black scales and the rust of iron is that the latter contains about a third more oxygen than the former. When the oxide of iron unites with the oil of vitriol, it forms the well known salt called *copperas*, (*sulphate of iron.*)

Iron is found among the incombustible elements of all, or nearly all plants and animals. Thus iron is found in the blood of all red-blooded animals, and of course must exist in their food. This metal exerts a powerful, but not very well understood function in the economy of vegetable and animal life. It is believed by Mr. Downing of the Horticulturist, to be a specific against the "yellows" in fruit trees. Copperas water has been thrown with a syringe over the leaves of pear and peach trees thus affected, and it is said with entire succes. The application of old iron about pear and other fruit trees, is strongly recommended. We have found from two to six per cent. of the oxide of iron in the soils that we have analysed. In low land, there is apt to be an excess of copperas, and other salts of iron. Thorough draining is the remedy for this. In dry uplands, it is possible that old and long cultivated fields may lack salts of iron. Very few experiments have been made to test the value of this mineral as a fertilizer for grain crops.

Lime is the next most abundant ingredient in the soils of this region. It is very seldom that we find more than 2½ per cent. of this alkaline earth in any soil. There are exceptions, however, where the proportion of lime increases till it amounts to a calcareous marl.

In 100 lbs. of pure common lime-stone, irrespective of water, there are within a small fraction 56 lbs. caustic lime united to 44 lbs. of carbonic acid. This acid is expelled in burning lime in kilns. On long exposure to the air, quick lime absorbs both moisture and carbonic acid, and becomes a mild carbonate, such as is found in soils.

It is an interesting fact that soils which overlie a limestone rock, and that pretty near the surface, are often greatly benefitted for producing wheat by a top dressing of burnt lime of 50 bushels per aker. Judge Porter, of Niagara Falls, has tried this practice on a large scale, where the lime rock was within two feet of the top of the ground. It was fol-

lowed by a marked improvement in his wheat crop. On Gen. Harmon's farm the application of lime seems to do little or no good. If our memory serves us rightly it contains on an average less than 2 per cent. of lime in its surface soil. Gypsum, however, (which is formed by the union of lime with oil of vitriol) is of essential service. Pure quick lime is formed by the union of 20½ parts of a metal called *calcium* with 8 parts of oxygen. The most valuable compounds of lime are gypsum and apatite, (bone earth.) The former is a compound of *sulphur* and lime, and the latter of *phosphorus*. Both of these simple elementary bodies are of vital importance in the growth of cultivated plants, and the organization of all animals. Combined with oxygen they form strong mineral acids, which are neutralized by readily uniting with iron, alumina, lime, potash, soda, and magnesia, in soils. Practical farmers have too long neglected to study the economic value of the various compounds of sulphur and phosphorus. Gypsum is the only mineral, the importance of which is at all appreciated. Its superiority over lime consists in the fact that it furnishes clover, peas, wheat, and all other plants, sulphur as well as lime. A moment's reflection is sufficient to convince any farmer that no animal can form its bones without lime. And if his soil wholly lacks this mineral, his crops cannot possibly create it out of nothing. Nor could an ox or horse have a particle of bone in its system if its food contained no lime. But lime *alone* is not capable of forming bone. *Phosphoric* acid is indispensable for that purpose, associated with lime. Nearly all that is taken from the soil in the kernels of grain, is removed *never* to return. A great deal of the phosphorus that escapes from the bodies of animals in their liquid and solid excretions, is lost to the fields that yield the daily food of these animals. And yet pure phosphorus is so precious, that a pound of it is worth to-day three dollars in the city of Rochester!

It is not book-farmers, but practical agriculturists in Holland and Belgium that make money by giving two pounds sterling for the urine of a single cow a year. They estimate the surface by the square yard which it takes to make a pound of beef, butter, or cheese. They feed their living growing plants, as well as their living growing animal.—Wheat is now worth in this city $1,50 a bushel, and yet not one farmer in ten can afford to study, or let his sons study, the things which nature uses in forming 40 bushels of wheat on an aker! Who cares whether the straw or stems of this plant are hard, bright, strong, and glassy, little liable to rust, or crinkle, by reason of its containing a good deal of *silica* in its tissues? Science tells the wheat grower how to dissolve fine atoms of sand at the roots of his grain, and avoid the growth of coarse, open, weak, and spongy stems, which will break down with an ordinary shower and wind, and form a nidus for the seeds and rapid maturity of parasite plants. Study the soil and learn how to dissolve flint, and form with it a covering to the stems of your wheat and other grain.

Study the soil and understand the true value of alum, iron, lime, potash, soda, magnesia, sulphur, phosphorus, carbon, nitrogen, oxygen, and hydrogen. These are the ingredients that Providence has ordained to form the bodies of all that lives, whether vegetable or animal.

In a future number we shall resume the consideration of this subject.—*Genesee Farmer.*

To Cure Rennet Skin.—Rennet, or runnet, used in cheese-making, is made from the stomachs of calves, which are some times called "vells." As soon as the calf has sucked whatever he likes, he should be killed and the stomach immediately taken out. The coadulated or curdled milk should then be poured into a dish and examined; and any substance found in it, but curd, should be removed.—The serum or watery part left in the stomach should be pressed out with a clean cloth. Then, as it is only the inner coat that is to be preserved, the outer skin should be well scraped, and all the fatty and useless covering thrown away. The curd should then be replaced in the stomach, and two gallons of strong brine with two lemons added to every six vells, and suffered to soak for ten or twelve hours. The lemons do away with any disagreeable smell, and give the rennet sweetness and agreeable flavor. Twenty or thirty gallons of vells may be made at a time, if convenient, as they are found to be much better when large quantities are made. After salting, the vells are hung up to dry, with a piece of flat wood put crosswise into each to stretch them out. When perfectly dried, they should appear somewhat of the color and texture of parchment. They should never be used in cheese-making, however, before they have stood at least two months; and they are still better at the end of a year; for, if they are not old, the rennet made from them will cause the cheese to "heave," and become full of holes or "eyes."—*American Agricult.*

TRANSPLANTING TREES.

We have at various times suggested to our readers the importance of the cultivation of fruit. We have also not been backward in hinting that a tree of good fruit occupied no more space in an orchard or a garden, than a worthless one. We now take the opportunity to say, that to select good fruit trees from the nursery, is not all that is essential.—Careful planting is of great importance, as will appear from the following remarks taken from *Downing's* excellent work on the *Fruits and Fruit Trees of America*, a work which comes at $1.50, which we have constantly for sale, and which, we think, every farmer will gain by possessing himself of. It contains abundance of valuable practical information. And further—there is a great deal to do after an orchard is planted; we mean in taking care to protect it from the cattle, sheep, and hogs. The editor remembers once hearing a nurseryman remark, that he believed nearly one half the trees sold and planted were destroyed by the cattle, &c., and in other ways, for want of care. Why should this be? Surely a tree that is worth buying, and the labor of planting, is worth subsequent protection.—*Ed. Far. Cab.*

As nearly all fruit trees are raised first in nurseries, and then removed to their final position in the orchard or fruit garden; as upon the manner of this removal depends not only their slow or rapid growth, their feebleness or vigor afterwards, and in many cases even their life, it is evident that it is in the highest degree important to understand and practice well this *transplanting*.

The season best adapted for transplanting fruit trees is a matter open to much difference of opinion among horticulturists; a difference founded mainly on experience, but without taking into account variation of climate and soils, two very important circumstances in all operations of this kind.

All physiologists, however, agree that the best season for transplanting deciduous trees is in autumn, directly after the fall of the leaf. The tree is then in a completely dormant state. Transplanted at this early season, whatever wounds may have been made in the roots commence healing at once, as a deposit directly takes place of granulous matter from the wound, and when the spring arrives the tree is already somewhat established, and ready to commence its growth. Autumn planting is for this reason greatly to be preferred in all mild climates and dry soils; and even for very hardy trees as the apple, in colder latitudes; as the fixed position in the ground, which trees planted then get by the autumnal and early spring rains, gives them an advantage, at the next season of growth, over newly moved trees.

On the other hand, in the northern portions of the Union, where the winters commence early, and are severe, spring planting are greatly preferred. There autumn and winter are not mild enough to allow this gradual process of healing and establishing the roots to go on; for when the ground is frozen to the depth of the roots of a tree, all that slow growth and collection of nutriment by the roots is necessarily at an end. And the more tender sorts of fruit trees, the peach and apricot, which are less hardy when newly planted than when their roots are entire, and well fixed in the soil, are liable to injury in their branches by the cold. The proper time in such a climate, is as early as the ground is in a fit condition in the spring.

Early in autumn, and in spring before the buds expand, may as a general rule, be considered the best seasons for transplanting. It is true that there are instances of excellent success in planting at all seasons, except midsummer; and there are many who, from having been once or twice

successful in transplanting when trees were nearly in leaf, avow that to be the best season; not taking into account, that their success was probably entirely owing to a fortunately damp state of the atmosphere at the time, and abundant rains after the experiment was performed. In the middle States, we are frequently liable to a dry period in early summer, directly following the season of removal, and if transplanting is deferred to a late period in spring, many of the trees will perish from drought, before their roots become established in the soil. Spring planting should, therefore, always be performed as soon as possible, that the roots may have the great benefit of the early and abundant rains of that season, and get well started before the heat of summer commences. For the neighborhood of New York, therefore, the best periods are, from the fall of the leaf to the middle of November, in autumn; and from the close of winter to the middle of April, in the spring; though commonly, the seasons of removal are frequently extended a month beyond these limits.

Taking up the trees is an important part of the operation. A transplanter should never forget that it is by the delicate and tender points or extremities of the root that trees take up their food; and that the chance of complete success is lessened, by every one of these points that is bruised or destroyed. If we could remove trees with every fibre entire, as we do a plant in a pot, they would scarcely show any sign of their change of position. In most cases, especially in that of trees taken from nurseries, this is, by the operation of removal, nearly impossible. But although we may not hope to get every root entire, we may, with proper care, preserve by far the larger portion of them, and more particularly the small and delicate fibres. After being taken up, they should be planted directly; or, if this cannot be done, they should be kept from drying by a covering of mats, and when sent to a distance by being packed in damp moss.*

Preparing the places.—Here is the fatal stumbling block of all novices and ignorant persons in transplanting. An English gardener, when he is about to plant fruit treet, talks about *preparing his borders*, an American says he will *dig his holes;* and we cannot give a more forcible illustration of the ideas of two persons as to the wants of a fruit tree, or a better notion of the comparative provision made to supply these wants, than by contrasting the two phrases themselves. The one looks upon a tree as a living being, whose life is to be rendered long, vigorous, and fruitful, by a good supply of food, and a soil mellow and easily penetrated by the smallest fibre; the other considers it very much in the light of a truncheon or a post, which he thrusts into the smallest possible hole, and supplies with the least portion of manure, trusting to what he seems to believe the inextinguishable powers of nature to make roots and branches under any circumstances. It is true that the terms differ somewhat from the nature of the culture and the greater preparation necessary in planting fruit trees in England, but this is not by any means sufficient to justify the different modes of performing the same operation there and here.

In truth, in this country, where the sun and climate are so favorable, where pruning and training are comparatively so little necessary, the great requisite to success in the ordinary culture of fruit trees is the *proper preparation of the soil* before a tree is planted. Whether a transplanted tree shall struggle several years to recover, or grow moderately after a short time, or at once start into a very luxuriant and vigorous growth, depends entirely upon the amount of care and labor the planter is willing to bestow on the soil for his trees. We have seen several instances where, side by side, one man planted his trees in large spaces of deeply moved and rich soil, and another in small holes in the common mode, which uniformly showed the trees of the first, larger after five years, than those of the last, after twelve.

No fruit tree should be planted in a hole of less size than three feet square, and eighteen inches to two feet deep. To this size and depth the soil should be removed and well pulverized, and it should, if necessary, be properly enriched by the application of manure, which must be thoroughly mixed with the whole mass of prepared soil by repeated turnings with the spade. This preparation will answer, but the most skilful cultivators among us make their spaces four or five feet in diameter, or three times the size of the roots, and it is incredible how much the luxuriance and vigor of growth, even in a poor soil, are promoted by this. No after mending of the soil, or top dressings applied to the surface can, in a climate of dry summers like ours, equal the effects of this early and deep loosening and enriching the soil. Its effects on the growth and health of the tree are permanent, and the little expense and care necessary in this preparation is a source of early and constant pleasure to the planter. This preparation may be made just before the tree is planted, but in heavy soils, it is much better to do it several months previously; and no shallow plowing of the soil can obviate the necessity and advantages of the practice, where healthy, vigorous orchards or fruit gardens are desired.

The whole art of transplanting, after this, consists in placing the roots as they were before, or in the most favorable position for growth. Begin by filling the hole with the prepared soil, within as many inches of the top as will allow the tree to stand exactly as deep as it previously stood. With the spade, shape this soil for the roots in the form of a little hillock on which to place the roots—and not, as is commonly done, in the form of a hollow; the roots will then extend in their natural position, not being forced to turn up at the ends. Next examine the roots, and cut off all wounded parts, garing the wound smooth. Hold the tree upright on its little mound in the hole of prepared soil extend the roots and cover them carefully with the remaining pulverized soil. As much of the success of transplanting depends on bringing the soil in contact with every fibre, so as to leave no hollows to cause the decay of the roots, not only must this be secured by patiently filling-in all cavities among the roots, but when the trees are not quite small, it is customary to pour in a pail of water when the roots are nearly all covered with soil. This carries the liquid mold to every hidden part. After the water has settled away, fill up the hole, pressing the earth gently about the tree with the foot, but avoiding the common practice of shaking it up and down by the stem. In windy situations it will be necessary to place a stake by the side of each tree to hold it upright, until it shall have taken firm root in the soil, but it is not needful in ordinary cases.

Avoid deep planting.—More than half the losses in orchard planting in America arise from this cause, and the equally common one of crowding the earth too tightly about the roots. No tree should be planted deeper than it formerly grew, as its roots are stifled for the want of air, or starved by the poverty of the soil at the depth where they are placed. It is much the better and more natural process in fact, to plant the tree so that it shall, when the whole is complete, appear just as deep as before, but standing on a little mound two or three inches higher than the level of the ground about. This, when the ground settles, will leave it nearly on a level with the previous surface.

Mulching is an excellent practice with transplanted trees, and more especially for those which are removed late in the spring. Mulching is nothing more than covering the ground about the stems with coarse straw, or litter from the barn yard, which by preventing evaporation, keeps the soil from becoming dry, and maintains it in that moist and equable condition of temperature most favorable to the growth of young roots. Very many trees, in a dry season, fail at midsummer, after having made a fine start, from the parched and variable condition of the earth about the roots. Watering, frequently fails to save such trees, but mulching when they are planted, will entirely obviate the necessity of watering in dry seasons, and promote growth under any circumstances. Indeed, watering upon the surface, as commonly performed, is a most injurious practice, as the roots stimulated at one period of the day by water, are only rendered more susceptible to the action of the hot sun at another, and the surface of the ground becomes so hard, by repeated watering, that the beneficial access of the air is almost cut off. If trees are well watered in the holes, while transplanting is going on, they will rarely need it again,

*We should notice an important exception to this in the case of trees packed for shipping across the Atlantic. In this case they should be packed only in *dry* moss; the moisture of the sea air being sufficient to keep the roots in good condition, while if packed in damp moss, they will be injured by rotting or excessive growth.—*Ed.*

and we may say *never*, if they are well mulched directly after planting.

The best manure to be used in preparing the soil for transplanting trees, is a compost formed of two-thirds muck or black peat earth, reduced by fermenting it several months in a heap with one-third fresh barn-yard manure. Almost every farm will supply this, and it is more permanent in its effects, and less drying in its nature, than the common manure of the stable. An admirable manure, recently applied with great success, is charcoal—the small broken bits and refuse of the charcoal pits—mixed intimately with the soil. Air-slaked lime is an excellent manure for fruit trees, in soils that are not naturally calcareous. Two or three handfuls may be mixed with the soil when preparing each space for planting, and a top dressing may be applied with advantage occasionally afterwards, to increase their productiveness. But wherever large orchards or fruit gardens are to be planted, the muck compost heap should be made ready before hand, as it is the cheapest, most valuable, and durable of all manures for fruit trees.

Pruning the heads of transplanted trees, at the season of removal, we think generally an injurious practice. It is certainly needless and hurtful in the case of small trees, or those of such a size as will allow the roots to be taken up nearly entire; for, as the action of the branches and the roots is precisely reciprocal, and as new roots are rapidly formed just in proportion to the healthy action of the leaves, it follows that by needlessly cutting off branches we lessen the vital action of the whole tree. At the same time, where trees are transplanted of so large a size that some of the roots are lost in removing them, it is necessary to cut back or shorten a few of the branches — as many as will restore the balance of the system — otherwise the perspiration of the leaves may be so great, as to exhaust the supply of sap faster than the roots can collect it. A little judgment only is necessary, to see at a glance, how much of the top must be pruned away before planting the tree, to equalize the loss between the branches and the roots.

When it is necessary to transplant fruit trees of large size, the best practice is to prepare them previously by digging a trench round the whole mass of roots, undermining them, and cutting off all roots projecting beyond this line. The trench should be dug at such a distance from the tree as will include all the large and sufficient ball of roots, and it should be done in the spring, or before midsummer, when it is desirable to remove the tree the next year. After all the roots that extend to this circular trench are cut off, the earth is replaced, and by the season following an abundance of small fibres is sent out by the amputated roots, which, when the whole is now removed, will insure the success and speedy growth of the tree. This is more completely the case when the tree is prepared two years before transplanting. A variation of this mode, which has been found quite as successful and less laborious, consists in leaving the trench open, and covering it with boards only, or boards with a top layer of turf. The tree then is somewhat checked in its growth, it throws out an abundance of small fibres into the ball of earth containing the roots, and is the next season transplanted with great ease and safety.

The proper size for transplanting varies somewhat with the sort of tree and the kind of culture intended. It is, however, a maxim equally well settled, both among theorists and the best practical men, that health, immediate vigor, and duration, are all greatly promoted by transplanting fruit trees of small size—from three to six or seven feet. We are fully aware with what impatience the beginner, or a person who knows little of the culture of trees, looks upon trees of this size—one who is eager to plant an orchard, and stock a garden with large trees, thinking to *gather a crop the next year*. The latter may indeed be done, but the transplanting so affects the tree, that its first scanty crop is followed by a long season of rest and feeble growth, while the plantation of young trees is making wood rapidly, and soon comes into a healthy and long continued state of productiveness—often long indeed before the large trees have fairly arrived at that condition. The small tree, transplanted with its system of roots and branches entire, suffers little or no check; the older and larger tree, loosing part of its roots, requires several years to resume its former vigor. The constitution of the small tree is healthy and unimpaired; that of the large is frequently much enfeebled. A stout and vigorous habit—what the nurserymen call a good *stocky plant*—is the true criterion of merit in selecting fruit trees for transplanting.

Trees intended for orchards, being often more exposed than those in gardens, should be somewhat larger—not less than six, or more than eight feet is the best size. For gardens, all experienced cultivators agree that a smaller size is preferable; we prefer plants two years old from the graft. Most gardeners abroad when they select trees with more than usual care, take what are called maiden plants—those one year old from the graft, and there can be no doubt that, taking into account health, duration, and the ease with which such a tree can be made to grow into any form, this is truly the preferable size for removal into a fruit garden. But we are an impatient people, and it is not till after another century of trial and experience in the culture of fruit trees, that cultivators generally in this country will become aware of the truth of this fact.

The facility with which the different fruit trees may be transplanted differs considerably. Plums are generally removed with most success, and after them nearly in the order as follows: quinces, apples, pears, peaches, nectarines, apricots, and cherries; the latter succeeding with some difficulty when of large size.

In planting an orchard, always avoid placing the trees in the same spot or near where an old tree stood before. Experience has taught us that the growth of a young tree, in such a position, is weak and feeble; the nourishment suitable to that kind of tree having already been exhausted by a previous growth, and the soil being half filled with old and decayed roots, which are detrimental to the health of the young tree.

WORM IN THE HEAD OF THE SHEEP.

The spring of the year is that season when no inconsiderable destruction of the flock is sometimes occasioned by what is known as the worm in the head. This worm is the larva of the *Oestrus Ovi*, a fly which proves a constant annoyance to the sheep from early in July till late in September, during which time it deposits its eggs at the point of the nostril, where the breath of the animal serves to hatch it; when it immediately crawls up the nostril, and from that into the frontal sinus, where it remains during the winter. On the occurrence of mild weather during the months of March and April, and in some cases earlier, as well as later, the worm has attained maturity, and passing down the nose of the sheep, falls upon the ground. It immediately burrows into the earth, where it lies for three or four months, when it comes forth a fly, and commences to lay its eggs, as its parent had done.

The time when sheep die from its depredations is about the period at which the worm has attained maturity, and then only on certain conditions, which we shall notice hereafter.

The destruction, the past season, has been, as we learn, very considerable, and many sheep-keepers have been sorely puzzled to account for the loss of their strongest and fattest sheep, just at the time when the rigors of winter were all passed and they supposed the flock about to go forth triumphantly to the enjoyments and remunerations of the warm season.

Without any previous indications of ill health, perhaps, the strongest animals in the flock are observed to lop their heads to one side, one after the other, exhibiting drooped ears, with some running at the nose, together with watery eyes, and an inability to go straight forward — from which time they get gradually worse, and die.

The remedies commonly resorted to are the syringing of different substances up the nostril, such as tobacco solutions, or snuff, or even spirits of turpentine, and sometimes the blowing up of tobacco smoke, a practice strongly recommended by Blacklock; but which, like all the others, we are induced to think does absolutely nothing towards killing the worms, while the sheep is often helped rapidly thereby out of existence.

The question will probably be asked here, "what would *you* recommend?" We answer, nothing; and will state our reasons.

From the situation of the worms, no such substances as are used can possibly reach them. The frontal sinus, which consists of many cav, is situated between the plates of the upper bones of the skull, and extends up into the horns of the sheep. The conducting passages from the nostril to these cavities are long, narrow, and crooked. On the contrary, the passages from the nostrils to the throat are large, open, short, and direct, and the whole liquid meant for the frontal sinus will infallibly find its way there; and besides, were the maggots immersed in any of these substances depended on for their destruction, we are by no means sure that they would be injured, any more than the bot of the horse, which is a larva of the same genus of fly, and which will "live and do well" in spirits of turpentine for forty-eight hours. As to tobacco smoke, we entirely doubt whether a particle of it can be got to the worms. The cavities where they lie are entirely tight above; and injecting smoke into them would be much like forcing a liquid into a very small-mouthed phial; which we know to be impossible, without first displacing the air. The smoke, like the liquid, will all infallibly be drawn down the mouth and to the lungs of the sheep. Trepanning and taking out the worms has been tried, but never, that we know, with success. The cavities are so many, and so winding, that the crown of the head would all have to be cut away to reach them all.

We said we would recommend nothing; but were we a flock-master we would try one thing, if practicable — the reason of which will be seen, when we state what we conceive to be the cause of the death of the sheep.

It is not probable that one sheep out of ten thousand which have worms in the head, ever suffers any inconvenience from it. The sheep's head is the place ordained of Providence as the nest of this worm; and ordinarily he passes his time there, is fully developed, and is gone, without injury to the animal affording him a home. Like the case of the bot in the horse, extrinsic causes only render him dangerous. These causes we will state.

Sheep are afflicted and die then with what is known as the worm in the head, whenever a season of cold occurs about the time already indicated, during the last weeks in March and the first in April, or *whenever the insect is matured, and is ready to pass out of the sheep's head to the earth.* Cold weather, at that time, prevents his leaving; and irritation, inflammation, and the death of a sheep, are the consequence of his remaining. A few cold days at that time will kill off the flock by dozens; while the occurrence of warm weather at once arrests the disease. If the weather is such as that the insect goes through its changes without let or hindrance, no damage occurs; but if he is retarded by the cold, his protector must die. What then are the causes of the death of the sheep? We are not prepared to say positively; but the following appears to be the best solution of the matter which we can give.

So long as the worm continues in the grub state, the frontal sinus of the sheep is his natural home. Its warmth is suitable to his wants. The mucus secreted by the membranes which line its cavities are his natural and proper food. This continues to be the case until another period in his existence is reached. He attains his growth as a grub, and is ready for the condition of a pupa. Whenever this happens, the sheep's head is no longer a place for him; and unless hindered by incidental causes, he comes down the canal to the nostrils—thence to the ground—where he quickly burrows, and sleeps out the period of his pupa life. Up to the time then when he is ready to leave the head of the sheep, we do not believe his presence is any detriment there, unless in cases where the health of the animal, from some other cause, is deranged. In that case it is very probable that the grubs might prove a source of irritation, and even of death—in the same manner as bots are supposed by many to do in the stomach of the horse.

But suppose, from any cause, such as cold weather, the grub is detained in the head of the sheep after the period when he ought to be burrowed in the earth. He is out of his element. None of the conditions of his home are any longer suitable to him. Is it now difficult to suppose that he may at once become a source of annoyance and disease.

His instinct is now to dig his way into the earth. Suppose he obeys this instinct so far as to undertake the burrowing process where he is. It would be easy thus to induce irritation, inflammation and death. Or perhaps his mere presence is sufficient to secure the same result.

If then, when the disease occurs, the flock, or such as are ready to be affected, could be put in a place sufficiently warmed, either by the sun or artificially, perhaps the destruction could be arrested. This only rests on hypothesis, and is merely thrown out as a hint worthy of trial.

The shepherd, however, must rely mainly on prevention; and here he can probably do but little. Tar is recommended as offensive to insects, and the advice is to smear the noses of the sheep with it during the latter part of July, and till some time in September, while the fly is about. But to do this to any purpose, it must be done every day, or at any rate so often that it will keep fresh — otherwise it has no smell. And provided it could be done so that the animal's nose should be daubed continually, we are by no means sure that it would avail much. The sheep-fly does not wait long to smell of the tar. Her motions are nearly as quick as lightning. She darts down from a considerable distance, and the egg is left, and she is away before a man could have time to snap his finger. The sheep is then in great distress, but it is too late—the egg is laid and worm is sure; nor is the fly content with laying one egg—the head of the sheep will often contain twenty or more of the larvæ.

Plowed ground, or dusty roads, are the natural resort of the sheep to escape the fly, and are as good a resource perhaps as any, with one exception—that is a cool, high, airy grove, or thicket, where the sheep can resort at mid-day. Here the fly seems to be loth to venture; only remaining in the open field where the hot sun renders the atmosphere sultry.—*Prairie Farmer.*

CHESS---TRANSMUTATION OF OATS, &c.

Having seen in the March number of the Farmer, a case of apparent transmutation of wheat to chess, which many suppose impossible on account of the difference of species, I would like to call attention to the fact of the change of oats to rye, as given by the author of Vestiges of Creation, on the authority of Dr. Lindley in the (London) Gardner's Chronicle of August, 1844:

"When oats sown at the usual time are kept cropped down during the summer and autumn, and allowed to remain over winter, a thin crop of rye is the harvest presented at the close of the ensuing summer. This experiment has been tried repeatedly but with one result; invariably the *secale cereal* (rye) is the crop reaped, where the *avena sativa* (oat,) a recognized different species was sown. Now it will not satisfy a strict inquirer to be told that the seeds of the rye were latent in the ground, and only superceded the dead product of the oats; for if any such fact were in the case, why should the usurping grain be always rye."

Again, in the "Sequel to the Vestiges," page 78-9, the following is related:

"In 1843 the Rev. Lord Arthur Hervey sowed a handful of oats, treated them in the manner recommended, by continually stopping the flowering stems, and the produce in 1844 was for the most part, ears of a very slender barley, having much the appearance of rye, with a little wheat, and some oats."

It is also stated as a certain fact that in orchiaceous plants, forms just as different as wheat, rye, oats, and barley have been proved by the most rigorous evidence, to be accidental variations of one common form, brought about no one knows how, but before our eyes, and rendered permanent by equally mysterious agency. Then, says reason, if they occur in these plants, why should they not also occur in corn plants? for it is not likely that such vagaries will be confined to one little group in the vegetable kingdom; it is more rational to believe them a part of a general system of creation. How can we be sure that wheat, rye, oats, and barley, are not all accidental offsets from unsuspected species? And this supposition having at least some appearances in its favor, we may safely suppose chess to be in the same class, which would account for its appearance in the case cited by your correspondent. E. S Johnson.

Penfield, March, 1847.—*Genesee Farmer.*

MANAGEMENT OF HONEY BEES.

Swarming. — The cause of swarming, in all cases, is an excess of population, the bees not having room for all to work to advantage. When bees are placed in very large hives, or when they are quartered in an open room, as is sometimes done, they never swarm. Swarming may also be prevented by affording additional room, either at the bottom, top, or side of the hive during the swarming season. As a matter of profit, in the increase of stocks, bees should never be placed in rooms, or in hives larger than twelve inches square. If we should have two swarms, the one in a hive *two* feet square, and the other in a hive *one* foot square, or in hives of the same solid contents, though differently shaped, the result of the increase of each, at the end of five years, would be, with good management, about as follows, viz: the swarm in the larger hive would about half fill it with comb the first year; the second year it would be completed, but no new swarm. The following spring would find the hive full of comb, but only half full of bees, and it would require the third year to replenish, and so it would continue *ad infinitum* yearly replenishing its lost population, and at the end of fifty years you would have no more bees than when you commenced!

The other hive would be plumply filled the first year; the second year a couple of fine swarms might be calculated on; the third year, we will say, only one swarm each (a very low estimate,) we now have six swarms; the fourth year we will double to a certainty, and the fifth year the same, making twenty-four swarms, while the larger hive "stands alone in its glory," if not entirely annihilated by the ravages of the moth, the more proble result of the two. In each hive there is but one queen, which is the source of all the increase. The eggs are laid by her. A hive one foot square is as large as she can use. In such a hive all the workers that she desires to carry out her ends, can be fully accommodated. Ten thousand bees to a hive in the spring are all sufficient—more would be but an incumbrance; hence, we find, that though there be one hundred thousand in a large hive during the breeding season, the following spring finds them departed to that "borne whence they never return."

The principal laying of the queen depends much upon the mildness of the spring and much upon the strength of the stock. I am fully satisfied that many of my stocks are in progress of breeding through the entire winter, to some extent. Indeed that such is the case with any populous stock we have abundant proof, in cases where the stock has been destroyed in the heart of winter, as an experiment to test the fact. Where such is the case, there is not that diminution in the number of the bees from fall to spring that ordinarily occurs. In weak stocks, the internal heat necessary for the maturing of the young brood cannot be produced, and we find that such stocks are compelled to await the approach of warm weather. Here we have the basis of prosperity in a nut-shell. If we cannot so manage that our hives will be populous to their greatest capacity, we may as well give up the idea of perfect success at once.

If the hive be well filled, the queen is fully aware that a large portion of her increase, which the laws of nature compel her to give, must leave her domicil; and she also, thro' instinct, learns that each swarm must be provided with a queen-regent, like herself, in order to perpetuate their species. These queens, or rather princesses, are produced from the common egg from which issue the workers, or from a common worker-grub, in its primary stages of advancement by a particular treatment. This fact is shown by the mode of artificial swarming, now practiced to some extent; the philosophy of which is this: If a piece of comb, containing the young brood of different stages of maturity, be attached to the top of an empty hive, and a quantity of bees be placed therein, having no queen, they will select a certain aged grub from the comb afforded them, and by a particular process of nursing and feeding (the nature of which never was nor ever will be known by us) they will produce a perfect queen, and proceed in their avocation as usual. Without this piece of comb no power or ingenuity of man could cause the bees to perform a single day's labor.

As each swarm requires a *princess* from the old stock from two to six are generally produced every spring, and such as are not wanted are immediately put to death, as it is entirely out of the question for more than one to exist in the same hive, unless it be during the short period awaiting the issue of a swarm. A very remarkable circumstance occurs in the development of these young princesses; they are so timid in their maturity as to issue from their cells respectively just as they are wanted to take their departure with the swarms. That is, giving them a short period after quitting their cells to gain strength for the journey, say forty-eight hours. It must here be borne in mind, that where there is sufficient room, as in very large hives, the queen sees no necessity of swarming, and consequently takes no measures to furnish the young princesses.

Indeed it ofter occurs that she neglects to do this in cases where the greatest necessity exists for them, and as a swarm never leaves in such a case we find many of our hives loaded with bees, clustering around and below during the entire warm season, which we watch with anxiety from day to day, or hour to hour, wondering what can keep them spell-bound to their tenement! As the needle invariably points to the north pole, and no human power can change this law of nature, so is the queen-bee the load-stone that draws every bee to her. The broiling rays of a summer's sun, famine, nay, the prospect of a certain death cannot move them. But when a young queen sallies forth on the wing of uncertain destiny, she is the magnet that draws after her a goodly portion of the animated mass. Whither she goes they follow, and as she would gather her subjects around her, preparatory to the journey, she selects a slender branch of some small tree and alights. The bees at once commence clustering around her, perhaps some few minutes before the last have left the hive. Whether the bees ever select a habitation before leaving the hive is a matter of doubt with me. They sometimes do take at once, after issuing to some suitable tenement, such as a decayed hive, or some hole in a building, or perhaps they may cluster for a few minutes, and then rapidly take their flight to the forest. All of this may be and probably is concerted after swarming. In confirmation of this, I once had a swarm issue from the hive in which the day previous it had been lodged, and after revolving a long time in the air, settled down upon the very hive from which they had just issued. Now here is an instance where a particular location is fixed upon, while on the wing. What caused this singular operation I cannot say, unless it was that they took some dislike to the hive and afterwards concluded to try it again. In order to remove such a difficulty, I took another hive, and as soon as they had fully clustered set it upon a table, and also set the hive with the bees upon its side near it; then with a dusting-brush swept them gently down upon the table, and they quietly entered the new hive, and did well.

The number of bees produced from April to July, in a strong stock, may be estimated at from 20,000 to 30,000. The first swarms I have generally found to be the largest, though some consider that in general the second are. The third are usually small. The period between first and second swarms is nine days; between second and third, six or seven, and if yet another, the next day or two. The time, however, is dependent upon the weather. If we have hot, sultry weather, the bees mature more rapidly, and are increased in numbers, and consequently throw off swarms faster, but we need never look for a second swarm sooner than a week, and if the weather be cold and wet, it may be delayed fourteen days.

There is a catastrophy attending a rainy spell of weather during the swarming season, that many persons may not be aware of, which is this: The queen, in laying the foundation of new princesses, calculates upon their maturity at certain periods; when, if the weather should permit, swarms would be ready to issue, according to her principles of the science; but as she cannot foretell the weather, she is often caught with three or four of these royal scions on hand, and the weather does not permit the issue of a swarm for several days, as fine weather for such an operation alone will do.

As these princesses ripen in maturity, a spirit of jealousy begins to be engendered, that sets the whole hive in an uproar. Here is a sad dilemma! The old queen expects to go off with the first swarm, in person, as soon as the weather becomes fine; in the mean time there are several young expectants of assuming the reins of government, who begin to

show a spirit of revolt as they grow in strength and age. If this state of things last for a week, through rainy weather, their jealousy becomes so furious that a general fight of extermination takes place, and the one that finds herself alive last assumes the reins of that stock; and if all the princesses have matured there will be no more swarming that season.

This is another reason why bees do not swarm, when we think they do not know what is for their own interest; but I assure the reader, that when they do not send off swarms, it is for a good and sufficient cause, though we may not be able to comprehend it. T. B. MINER.

Ravenswood, L. I., May, 1847.—*American Agriculturist.*

HOEING OR CULTIVATING CROPS.

The chief or primary object in hoeing crops is to increase the quantity and improve the quality of the produce. To this end various means are adopted. A point of the first consequence, is the eradication of weeds and all plants excepting those which it is wished to cultivate. The necessity of destroying weeds arises from several causes. Their growth interferes with and injures the crop in various ways. They exhaust the soil, more or less, of the elements which constitute the food of cultivated plants; they especially abstract the moisture of the soil, making a constant drain upon it in this respect, from the first moment of their existence.

It is of great importance that weeds should be killed while they are young. If killed at this stage, the injury they occasion is comparatively trifling, and the expense incurred in the operation is but little, compared with what would be required to effect the object when they are more fully grown. The brush of a hoe or the scratch of a light harrow will effectually kill a weed at the time it appears above ground, whereas the growth of a few weeks would give it such a hold on the soil that it would withstand considerable force, and to eradicate it would require ten times the labor which would have effected the object in the first instance. Besides, if weeds are allowed to reach a large size, their roots become more or less mingled and entwined with the roots of the cultivated plants, so that in pulling up the weeds the crop is liable to be injured.

Some people seem not to be aware of the serious injury which the introduction of pernicious plants is to the soil. Some of the rich "corn lands" of the Western States have already suffered a great deterioration from this cause. The negligent and slovenly manner in which the corn is too frequently "tended" has filled the soil with every pest which will grow on it. The foul growth is in many cases suffered to increase every year, till there seems to be between the weeds and corn a great strife for the mastery; and though the corn, on some of the most fertile fields, grows twelve to fifteen feet high, or more, it scarcely exceeds the weeds in height or strength, and judging from the liberal border around the fields, of which the weeds seem to have gained full possession, and from their frequent appearance among the crop, the prospect seems fair for the day being ultimately carried by them.

Stirring the ground, to a certain extent, is beneficial to crops, aside from the effect of keeping down the weeds. By keeping the soil loose, the roots of plants more readily extend themselves; the soil is rendered more permeable to the sun, by which a more congenial temperature is gained for plants; it facilitates the absorption of dews, which bring down ammonia and fertilizing elements from the atmosphere; and it exposes the soil more to the action of the air, by which the decomposition and combination of the various elements of vegetable food is effected. The action of the oxygen of the atmosphere is thought to be particularly beneficial on clays, and slaty and granitic soils. The combination of the oxygen with the iron, and its action on the other mineral elements, produces a disintegration of the stony materials, and leaves the soil more friable. The admission of oxygen into the soil may likewise be useful by its entering into combination with the carbon of the soil, and thus forming carbonic acid, the food of plants.

On some soils, especially those of a tenacious nature, a hard crust frequently forms, by which heat and air are much excluded. Some simple implement, as a harrow or cultivator, should be used with sufficient frequency to prevent the crust from forming. As the growth of plants increases, their roots are more widely extended, and it is not proper to use tools which will mutilate and destroy the roots.

It is important that plants should be duly exposed to the influence of light and air. It is only under the influence of light that they are able to digest their food. They take the carbonic acid and water, but by the aid of light they decompose the carbonic acid, giving off the oxygen, and retaining the carbon to form their tissues. This influence of light is quite surprising. If a plant is placed in a dark room, and a ray of light is admitted on one side, the ends of the branches are soon directed towards the light, and the plant seems to struggle to reach that part of the room where the light is strongest and its influence most direct. If a small tree be planted under or near a large one, or on the side of a forest, it soon begins to lean to the side nearest to the light, and will continue to grow in this direction, putting out but few or no branches on the side most affected by the shade of other trees.

These facts are cited to show the necessity of giving plants sufficient room. If they are crowded too thickly together, the sun is too much excluded from the soil, and, from the want of sufficient circulation of air, the plants are less healthy, being more subject to blight, and the light is prevented from coming in contact with the stems and leaves in such a manner that the sap can be properly elaborated. Where plants stand so thick that the light strikes them mostly on the tops, they are drawn into slender stalks, having but little substance.

But in cedar and pine forests, where it is some times desired that the trees, in order to make timber for certain purposes, may attain a great height in proportion to their circumference, a dense growth is an advantage.—*Alb. Cult.*

DAIRY HUSBANDRY.

England has long been celebrated for its dairy products, at least for the quality of its cheese; and this is often of a superior description.

1. *Butter.*—The butter in England is much of it, delicious, especially that which is made in private families, where it is churned from new and sweet cream every morning, and brought fresh from the churn to the breakfast table; and more particularly tubs. Such is the diversity of opinion every where prevalent. The Scotch had no fears that the cream would not find its way to the surface unless the principle of gravitation were to be reversed. One of the best dairy women in the country never suffers any water to be applied to the butter when taken out of the churn, a practice not uncommon.

2. *Cheese.*—English cheese has long been celebrated for its excellence, but it is far from being all equally good.—The Stilton cheese stands, by general admission, at the head; the Cheshire, the Cheddar, the Gloucestershire, and the Wiltshire, have their different partisans, and though they differ from each other, are preferred according to the particular tastes of those who eat them. The celebrated Dunlop cheese of Scotland, which is certainly excellent, is made with one-fourth part of ewes' milk.

It cannot be expected that I should go into all the processes of the dairy. My remarks must be general. All dairymen seem to agree, that, in cheese making, much depends on the character of the soil upon which the cows are fed. Wet and low grounds, producing a rank and coarse herbage, are unfavorable, and so are the artificial grasses given to the cows green. An old pasture and a dry soil are most desirable; and it is said, that the poorer the pasture, the better the cheese. Wet and cold pastures have been converted into good cheese grounds by thorough draining and cleaning. The quality of the cheese depends, more than upon anything else, upon the skilful and careful management of the dairymade herself. This is to be learned by practice, and very little useful direction can be conveyed by words. The making of cheese is a chemical operation. We shall be glad when chemistry is so applied as to determine the rules by which success may be made certain.

The average quantity of cheese made is reckoned at one hundred and twelve pounds to one hundred gallons of new milk. Few cheeses are made wholly of new milk, being in general what are called *two meal* cheese, and the cream be-

ing taken off the previous night's milk, to be converted into butter. In this case, according to the practice of an excellent Vermont farmer within my knowledge, the buttermilk would go back to the cheese and serve to enrich it. The cheeses in general are made very hard, which is owing, in the first place, to cutting the curd very fine, and next, to the severe pressure which is given to them. The rennets are here called *vells;* and the best are imported from Ireland. At one of the principal dairies which I visited, it was customary to put six skins, at the beginning of the season, into two gallons of brine, and use this liquid for forming the curd, in such quantities and at such time as required. A quantity of lemon was also put into the liquid, to correct the taste and give it a flavor; but I believe with no advantage to the cheese. It is strongly urged not to use the rennets until they are a full year old, as otherwise they cause the cheese to heave and to be full of holes. In most dairies it is customary to scald the curd with hot whey, but by the best dairywomen this is disapproved, as tending to impoverish the cheese. The coloring the cheese with anatto is not universally practiced, nor does it much benefit the sale, where the character of the dairy is known.—*Colman's Tour.*

DEEP PLOWING.

The use of the subsoil plow is often of no avail, from a neglect of the very essential preliminary improvement of removing (by improved drainage) the water to a greater depth from the surface; and from this neglect the success of perhaps a really valuable improvement is thence at once rendered impossible. It is in vain for the farmer, indeed, to deepen the soil, and thus endeavor to afford the roots of his crops a greater extent of pasturage, if that additional space is pre-occupied by water. It is also to be well remembered, as some encouragement to the farmer in his efforts to overcome any obstacles that may present themselves to the profitable attainment of this deepening of the soil, that he is in the far greater majority of instances endeavoring to incorporate with the surface soil a greater extent of the same earths or rock from which, by the effect of natural and artificial causes, the surface soil is almost entirely composed; he is, in fact, generally laboring, not to add *new* materials to the land he cultivates, but merely to add to it an increased mass of the same substance of which the cultivated soil was originally formed. The common opinion that a heavy subsoil plow, and the consequent employment of a very considerable horse power, is needed for the deeper disturbance of the subsoil, is a very erroneous conclusion. It is, in very many cases, only necessary to take off the mold-board, from the common iron plow, and a subsoil plow is produced, capable of being drawn by only two horses, and yet of penetrating to the required depth. In Scotland they have some time since adopted this plan. Mr. J. Wilson of Eastfield has evidently adopted this mode with very considerable success. He observes, "The subsoil plow, from its great weight, I conceive cannot be expected in many districts to be much used, as it requires a greater number of horses to wield it than is kept on many farms; but as a strong iron plow, drawn by two horses, has been found to answer equally well, at least where the soil is not very tenacious, subsoil plowing may be performed any where at a trifling expense."

Bell's Weekly Messenger.

THE PEACH GRUB.

Mr. Editor: — Your correspondent D. asks for information, how to defend his peach trees from the grub. The answer is as simple as the "way to Parish church." It is to *fence* them out—and there is no other way — but not with a six rail fence, without he can yoke them. I use three methods, all of which are effective.

In the first place, in the spring examine the roots thoroughly, as long as they exude red gum, containing the *excuviæ* of the grub. First process: Draw with the hoe, a mound of earth about six inches high around the body of the tree, and not remove it till the first frosts, and then examine; if there are any grubs they will be so high up that they are easily discovered and killed. Or, 2d process: Clear away as before and apply around the body a quantity of straight straw, about one foot high, letting the lower ends run out a few inches on the ground to cover with earth, and bind with a straw or other band in two places. Or, 3d process: Bind on a sheet of straw paste-board or binder's boards, and if tarred, all the better. In all cases clean the tree the first frosts, as after that period there is no danger of the fly's impregnating the tree, as it is past its season. It is of no use to tar or apply any offensive substance to the body of the tree, for as it grows and expands the bark cracks and exposes the tender part, where the fly deposits its eggs.

The parent of this grub is not unlike the black wasp, with steel blue wings, and a yellow ring around its abdomen.—Its habits are very sly and active, and not easy to detect. In July the grub goes into the crysalis state, enveloped in a reddish glazed case, and lays on the top of the earth at the root of the tree.

To manure and improve a peach orchard already set out, let him put it under the operation of some hoed crop. Manure and work among them as if they were a great corn hill, and so keep doing till it is in a thrifty state, when it may lay awhile in grass, but not to clover; their long tap roots get rather more than their share of the nutriment and moisture of the soil. H. Y.

Rochester, March, 1847.—*Genesee Farmer.*

ROSE CULTURE.

Many persons are deterred from paying much attention to the culture of the rose from the fact that its blossoms are so short-lived; preferring to give attention to those shrubs or plants which afford a bloom during the season, or at least for a considerable time together. Our common June roses are in blossom for two or three weeks, and for the rest of the season only afford us ragged shrubs.

There is a class of roses of late introduction, called hardy, which are put down as perpetuals; but their prices are so high, and their ability to resist our climate so doubtful, that were they easily obtained—which is not the case yet—they would hardly be ventured upon, by any but the most determined amateurs.

There is, however, a class of roses, always to be obtained cheap, and easy of culture, and which bloom during the season; but which are regarded as so tender that they are pretty generally shunned, except for house culture. These are the tea and China roses; specimens of which are to be found in almost every parlor, in pots, where they afford more or less bloom, according to treatment.

These roses may be made in a good degree hardy, by planting them in the open ground, and they may be left out over winter with entire success, in the manner hereafter laid down. The ground where they are set should be thoroughly dry, and of a warm soil; and can hardly be made too rich, provided that no manure is allowed to touch their roots, and provided, as before mentioned, that the ground is perfectly drained. If they can be so placed as to be half sheltered from the sun during the hot dry weather of July and August, they will bloom much more beautifully; and indeed without some such protection their bloom will be very scant and ragged. The same object will be promoted, also, by covering the ground where they stand with some moss, old shavings, straw, or woolen rags, partially covered with earth to prevent evaporation and keep the ground moist. The bushes should also be freely trimmed after every month's blossoming; and provided large blossoms are wanted, a portion of the buds should be plucked off as soon as formed.

Now for the winter treatment. The first frosts will not injure them, even though they may be severe. They may be left without any protection till November, and often till the end of that month. Before the ground freezes, however, bend down the bushes and cover them over with earth, at first perhaps two or three inches, and finally to about six inches in depth. In bending them down, the bushes should be spread; not being suffered to lie in a bunch so that the air can have access to them; as in that case they will mold. If the foliage is thick, cut it away, so that the earth may be well pressed upon each shoot.

When the weather begins to be warm in the spring—say the last of March or early in April, in this climate—gradually uncover them, and cut away a good part of the tops;

and they are ready at once to put forth leaves, and render a good account of themselves for the summer.

Those who follow this method will have perpetual roses of the most beautiful sorts, and with a small amount of trouble.

We are greatly in favor of burying plants, of almost all kinds, having tried it the past winter with entire success, upon shrubs and trees of various descriptions; including roses of various habits, cherry stocks, ornamental shrubs, and strawberry plants. Of the latter we buried a dozen, six inches in depth; of which eight put forth with great vigor on being planted out in April; while others set in November in the open ground, and covered with manure, died as soon as spring opened.

The earth keeps the shrub in entire vigor; so that on being planted out, the top is not exhausted and necessitated to draw upon the root for sustenance, but pushes forth of its own strength; thus giving the root a chance to recover from the effects of the rupture received in being taken up.

Prairie Farmer.

MODE OF FEEDING CORN.

BY W. CHALLACOMBE.

Messrs. Editors: — I have a practice, on my farm, that I do not see followed by my neighbors, and which I have found to save a great deal of time and labor. Having been in the habit of cutting up most of my corn, I have had a great deal of hauling corn to do; but not being engaged so largely as to make it profitable to have one of the low-wheeled wagons on purpose, a friend hinted the building of a rack slung underneath the wheels of my farm wagon. The consequence was the hauling with more ease, with one yoke of cattle, than I used to be able to do with four. The plan was this: take two stout oak poles, twenty or twenty-two feet long; cut a mortice in the but end of each; then take a tough piece, with a tenon on each end, and insert in the mortices for a cross-piece; the width of the rack to be the same as the distance between the hub bands; then take a log chain and fasten in the middle of the cross-piece, and pass it around the king-bolt before the axletree; then draw the rack close up to the axletree, and fasten the chain; next run the hind wheels over the other ends of the poles, and with a pair of trace-chains fasten them close to the axeltree; a cross-piece pinned where the hounds come answers in place of a reach; there must also be a temporary reach to keep down the forward hounds; with the addition of a cross-piece or two, projecting sufficiently far to lay the sides on, and a rail or plank through in the middle makes a rack large enough to haul from four to six shocks of corn at a load, with one yoke of cattle.—*Prairie Farmer.*

Carlinville, April, 1847.

THE TRUE LAW OF POPULATION.

Some new ideas on population have been broached by Mr. Doubleday, in a publication lately made by him entitled "The True Law of Population." This law of population, he endeavors to show, is connected with and depends upon the *nature* of the food of the people. Mr. Doubleday says "his theory is founded on the admissions of all medical and physiological authorities of modern times, and supported by many of ancient times, and is corroborated by an appeal to living generations." He affirms that "populations are uniformly found thin in pastoral countries, where the food is animal food chiefly; denser, where it is mixed partially with vegetable element; denser still, where it is vegetable only, but with plenty; and densest of all where it is vegetable, but with scarcity superadded."

The examples which the author quotes from the history and condition of the world go far toward establishing his theory. If he be correct, the true remedy for excessive numbers, is not emigration, but plentiful and nutritious food. He divides society into three classes—"the worst dieted, the moderately dieted, and the luxuriously dieted;" and observes "that it is upon the numerical proportion which these three states bear to each other in any society, that increase or decrease on the whole depends." Mr. Doubleday's argument derives considerable support from the decay of opulent families, and their rapid extinction. We have abundant evidence of this at various epochs, and in different countries.

Tacitus gives us one instance in the reign of the Emperor Claudius. If we turn to England we shall find that, but for comparatively new creations, both the peerage and baronetage of England would have been extinct. The number of English peers in 1837 was 350, of which 247 had been created since 1760. The decay of the baronets had been more remarkable still. So that if no new peers had been created since 1670 the present number would have been only 103, and but for perpetual new creations there would scarcely have been a baronet left. Mr. Malthus noticed a similar decay in the higher and wealthier families of Berne, in Switzerland; and Mr. Sadler cited Addison's authority to prove the extraordinary decrease of the Venition nobility.

If Mr. Doubleday's theory be true, and it be a law of nature that the worst dieted people shall become the most numerous, then pauper relief to Ireland, in the shape of poor food, will only aggravate the evil. The effectual remedy is to give the Irish people a sufficiency of animal food; Irish produce must be consumed in Ireland instead of being exported. The standard of living must be raised; but it will not be raised by the introduction of the poor laws, and feeding the hungry crowds with poor-house food. This will only aggravate the evil through each successive generation. Mr. D's book is deserving the serious consideration of political economists and statesmen.—*Genesee Farmer.*

THE POTATO WORM.

We have heard much complaint in this city of the large green worm, which during the last season infested the tomatoes in countless numbers. — The injury to the tomato vine was perhaps not much; as a considerable degree of trimming does that esculent very little harm; but these immense worms, often three inches in length and of the size of a man's finger, are positively shocking to weak nerves; and we have heard some of the ladies declare that unless this nuisance abated, they could not think of venturing among the tomatoe vines, even if they could persuade themselves to eat tomatoes at all. How extensively scattered these insects are we have not learned.

Perhaps some of our readers may have seen last season flying about among the flowers at evening, what at first they took to be a humming-bird, which on further examination proved itself a very large miller or butter-fly, with a tongue or proboscis five or six inches in length—a very beautiful insect. If it would serve to quiet the nerves of those who fear these green worms so much, to inform them that this enormous and hateful tomato-eater is this same false humming-bird which they have admired so much, we would do it; for in truth it is the very same. If our readers will watch for these butterflies from the middle of June to the middle of July and later, they will see them again in great numbers the coming season, for the earth is full of them in gardens which were the theatre of their last summer exploits. We have dug up perhaps a hundred of them within a day or two. They will be found now in the shape of chrysalids—their covering being a bright brown shell with several rings and a long slim case for the tongue, which is bent back so as to touch the breast at the end, looking, as Dr. Harris observes, like a jug handle. The chrysalis is nearly the size of a man's thumb.

More can be done now in a little time by destroying these crysalids than can be done during all the season, if they are suffered to come forth and deposit their eggs.

This insect is called by some a hawk moth, and belongs to the genus Sphinx, order Lepidoptera. The worm has sixteen legs, eight on a side, and has a sort of thorn upon the tail.

YOUNG FRUIT TREES, which lack vigor of growth from too poor a soil, should be stimulated with a good coating of old manure spread round them and spaded in as soon as the frost leaves the ground. All fruit trees, except of the largest size, which do not stand in ground kept constantly cultivated by the hoe, should have the soil for several feet, kept well spaded round them. Soapsuds, especially for peach trees, are fine.—*Albany Cultivator.*

POINTS OF CATTLE.

In order to become a good judge of cattle, the young farmer ought, first, to have the model of a first rate animal standing up before him in his mind's eye, as a standard by which he can compare the *real* cattle which he examines; and second, he ought to be familiar with the names given to the several parts by which he can describe the animal, and thus tell the relative value of the several points and distinguish the peculiar merits and deficiencies of that which he examines. Ambrose Stevens, in vol. 5th of the American Agriculturist, has given a very good compend of the points of cattle by which a good conformation is judged of with great correctness. We make an abstract of it for the benefit of our young readers, and old ones, too, if they have never paid any attention to the subject. He begins,

1st, at the Brisket. Here lies, in a proper beast, some of the best corning pieces in the whole carcass. If it be full in front and broad between the legs, there will be a large layer of fine flesh upon it. There is the same amount of bone in a bad brisket as in a good one. The expansion into prominence is nearly, and in breadth wholly, from flesh. Hence a *thin brisket* is all bone and worthless—a full one covered with it is valuable.

2d. Chine. (The chine is the central part of the back. [Ed.) It should be broad, full and level, and why? If it be sharp and thin it projects. There is more bone in a thin chine than in a broad one; it is higher. When the chine is broad and round, the bones are lower and smaller. A high chine is always connected with a flat rib—a broad chine with a round rib. A flat rib (flat side) attaches to the spine in an oblique direction, making an obtuse angle; a round rib attaches in a perpendicular direction, making a right angle. The right angle contains the most flesh.

3d. Crops. (The part called crops is just back of the upper part of the shoulder blade, running a little under it. [Ed.) These are bad from want of flesh and good from its presence. Hence full crops denote excellence. The chines and crops are the parts where the finest beef lies. The animal to be good must have them good.

4th. The back and loins must be broad. (The loin is the part over the kidneys. [Ed.) This must be for the same reasons given for broad chine and crops; to have a round rib and space for flesh.

5th. Ribs. The rib must be round. When the ribs project out like the hoops of a barrel, there is breadth to the chine and back, and makes a right angle to the junction with the spine, giving room for flesh. It also gives more room to the viscera of the chest and belly. These should be large to give size and capacity to furnish the proper amount of nutriment to make large flesh. Round ribs are excellence.

6th. Rumps. The rumps must be long, broad and level. The longer they are, the more space for meat; they must be broad and level, for the reason that the chine and back should be.

The rump makes some of the best beef-steaks in the carcass; those next the hips are the very best in the carcass. The tail end of the rump makes some of the best corning pieces and quite as good a steak as the meat of the *upper* part of the loin. The shorter the rump the narrower it is as a general rule, and the less steak and corning pieces. When it is narrow, the tail is high and the skin and muscles are rigid and flesh poor; when broad and level, there is more flesh and of better quality.

7th. Hips. The hip bones should be broad. This, because of the formation which makes broad back and rumps. They are offal but surrounded with meat. The wider the hip bones the more space to hold meat, and the wide ones do hold the meat which the narrow ones cannot.

8th. Thigh. The thigh should be *small, thin, light* and *fine*. Here, observes Mr. S., I am in opposition to the *fashion* which most Short Horn men *follow* and approve. I will merely state that the larger the thigh, the shorter the rump and the narrower the hip bones. The *pumpkin thighs* have always accompanying them short rumps and narrow hip bones. The meat of the thigh at the lower end is always coarse. The larger it is, the coarser and poorer it is, being dark and stringy. Now the best part of the meat at the thigh is the upper part next the rump. When the thigh is very large, it is at the expense of the rump and the upper part of the thigh. If the thigh be large, there will be less superior and more inferior meat.

I never saw and never heard of a large thighed cow that was a good milker; or a large thighed ox that was a good worker.

The larger the thigh the straighter the leg in the perpendicular; and a straight leg never went with a good bag or working power. A straight leg is a bad lever, and the muscles of the thigh below are not the muscles of draught, but are a weight to prevent draught. The muscles of draught are along the back, loin, and upper part of the thigh.

The parts mentioned above, by Mr. Stevens, are the most prominent and valuable of the animal. The head, neck and tail are offal, but these should, nevertheless, be fine, small and neat, not only because in such cases the offal would be less, but the symetry of the animal would be more correct and beautiful, and indicate more activity and purity of blood.

Maine Farmer.

FAMILIAR SCIENCE IN FARMING.

BY JOHN B. NEWMAN, M. D.

A plant should be considered in the light of a community, rather than a single individual. The little embryo which with its store of nourishment and envelops is called a seed, contains in itself an immense number of other embryos, which only require favorable circumstances and excitation for development. The small stem which first shoots upward has an abundance of latent germs scattered throughout its substance; each plant has its own peculiar laws, and according to these laws the germs develop in succession the same phenomena that was shown in the germination of the seed under ground in the first instance is in a certain degree repeated. The new stem pushes through the cuticle of the plant in the form of a bud, and lays the foundation of a branch by allowing others to rise in turn from it, the termination of each being the starting point of its successor. The lower part or descending axis of the bud is sending a root downwards, which continues its course until it arrives beyond the end of the other roots, where its spongioles expand, suck up and digest materials for its leaves to elaborate.

Wherever there is a point of irritation in the living structure, to that point, will the circulating fluids, as the sap in plants and blood in animals, be directed; this fact accounting for the knots and streaks, and sometimes beautiful curled and wavy lines which so much adorn our polished woods; the germ having been excited in these cases, and attempted to reach the surface in vain, its efforts producing no other result than the formation of an embellished tomb; which is formed by the complicated convolutions of the sap vessels.

I was much interested in watching a number of rose bushes in my garden this spring. The little reddish buds which have formed on the wood of the previous year, excited by the warmth of some sunny days, began to expand and display greenish protuberances, and in a few instances went so far as to put forth entire leaves. At this juncture the weather changed, and it was once more uncomfortably cold; the exposed leaves were almost immediately invested with a scaly covering similar to the bud-cover which had opened; on examination I found that the conservative principle of the plant had changed the expanding leaves into scales to protect the inner and tender sprouts from the inclemency of the weather.

Most of the plants in our cold regions envelop the leaf-buds in scales when they first appear, but as might be expected when transplanted to a warmer climate where protection of this kind is needless, they sprout without them. A writer particularly remarks this of the horse chestnut, which in its native clime of India, unfolds its young leaves to the genial atmosphere without risk of their suffering from the exposure, while in this country many successive leaflets are arrested in their growth and compelled to degenerate into scales.

As the weather became warmer the rose leaves rapidly expanded, the rootlets of the successive germs running below through the nearest branch which it entered between the wood and bark, and thus continuing until it had arrived at the roots, sending out its opongioles beyond their terminations. It may be seen from this that every freshly developed germ adds to the diameter of the main trunk as well

as the branches, besides lengthening the roots; so that the branches of a tree taken collectively are exactly equal to the bulk of the main trunk; they in fact constituting it; its growth being from above downwards.

The theory of propagation by slips, layers, &c., is thus at once evident; it differs from raising the plants by seed, in the fact that a number of already developed embryos are taken at once, the mass of embryos or slips having been produced under exactly the same influences as its brothers in the community from which it was taken, resembles that community even to the minutest characteristic. Thus flourists will divide a favorite plant so as always to pre-save its identity, no matter the number of slips that are taken; whereas did they attempt to propagate by seed, one of the same species would be raised, but without being different from the general run of others of the kind.

As a tree in the first instance came from an embryo and that embryo does not contain in infinite number of others in itself it must in process of time be exhausted, and the very instant the supply of embryos fails does the decay of the tree begin. This enables us to answer Professor Gray, who remarks that, "The branches of each year's growth are kept in fresh communication by means of the newest layers of wood with the extremities of the roots which are alone active in absorbing the crude food of the plant from the soil. The fluid they absorb is then conveyed directly to the branches of the season, which alone develop leaves to digest.—And the food they receive having been elaborated and converted into organic nourishing matter is partly expended in the upper growth of new branches and partly in the downward formation of wood reaching from the highest leaves to the remotest rootlets. These two essential organs, namely, the rootlets which absorb and the leaves which digest the plant's nourishment, whatever their distance or the age of the tree are maintained in fresh communication through the new annual layers. As the tree therefore annually renews its buds and leaves, its wood and roots, everything indeed that is concerned in its life and growth, there seems to be no reason, no necessary cause inherent in the tree itself, why it should not live indefinitely." And there is only one reason why it should not, and that is the exhaustion of the germs in which its life consisted. Wood while growing is white, but that process having ceased, a coloring matter is often deposited in its tubes; this fact may be illustrated by twigs of the ebony, mahogany, &c., the inner being hard and deeply colored, the outer white and soft.

Gardeners take advantage of the fact of a tree consisting of many individuals, bound together by a common bark, and often engraft on a plant, other species of the same family; that is to place a slip between the young wood and bark as to allow free course for the rootlets of its germs to run down to the extremities of the roots, and send out spongioles to supply themselves with nutriment; and thus the graft preserves its specific character, and does not intermix with its cousins on the strange trunk or home where it has its abiding place.

As a matter of course, the more rapidly a plant sends out its germs, the sooner its decay is hastened; and it makes but little difference whether they are taken from it by means of slips or seeds; taking away the slips diminishes the quantity of seeds and vice versa. The vine which in a state of nature bears five seeds to each grape, when propagated by division has only two, and in many instances loses them entirely. And the same circumstance has happened to the sugar-cane.

Well bearing fruit trees are proverbially stunted and short lived, the decay being exactly in proportion to the quantity of fruit they bear. The giant oak that lives a thousand years, whose enormous trunk is capable of affording house-room, perfects only a little acorn; it always aborts the greater part of its germs; destroying its children lest their sustenance should weaken its powers, and thus lives we might say, by selfishness. The chestnut tree of a hundred horses on Mount Etna, with it diminutive roots, affords another example of the same kind.

For years back I have seen notices in many works on botany relative to the Lombardy poplars in our country, becoming enfeebled with age: all the trees of this species, coming from a single individual. Eaton observes, that in looking at them, we see but the feeble limbs of an exile in dotage, though yet sustained in a thousand localities; its grafts however recently inserted, in obedience to the common law, feeling the effects of age in the same degree with twigs remaining on the original plant. There is an instance more to the purpose than I have advanced, in support of my views, and which will come home to every one—the potato, whose recent failure has produced such disastrous results in the old countries. In a capital article on the "Potato Disease" by J. L. Hyde, Esq., in the Farmer and Mechanic of May 6th, which caught my eye a moment since, I find the cause attributed to a loss of vitality in the plant, and the writer is undoubtedly correct.

Two causes have conspired to produce this result originating from the same source, drawing too much on the stock of a single embryo. One cause is in the exhaustion of the latent germs, and the other in the constant intermarriage of two near relations. We have proved in the previous article that plants possess a soul (life power) of the same kind, tho' inferior in degree to that of the lower animals, and man; and when acted upon by the same kind of influences, they exhibit similar phenomena. We need not refer to the aristocracy of Europe for examples of the fatal effects resulting from the marriages of near relations. Too many such cases can be seen every day around us.

Efforts to renovate the present potato are worse than useless; the only method at all likely to succeed, and which would be certain of success in restoring the crops is, to *import* new seed from its native home.* And perhaps the warning already given may not only suffice to prevent future accidents, but lead to the improvement of vegetables quite as important as the potato.—*Farmer and Mechanic.*

SMALL FARMS.

It is seldom that we find so much sound sense in so small a compass, as is contained in the following editorial remarks of the Massachusetts Plowman:

It is fortunate for mankind, that the farmer of five hundred akers can never realize so much nett profit as the farmer of fifty akers. It is not possible, without remodeling the principles of Geometry, to bring the fields of a large farm so near to the home barn as the fields of a small one.

It is fortunate for republican equality, that large capitalists find it unprofitable to invest largely in farming lands. Few of these men are able to obtain four per cent. on farms that they may purchase for the purpose of leasing. This being generally understood, there is a better chance for the farmer of small capital to obtain a sufficient number of akers to secure an independent living, while he can give all the members of his family full employment at home.

So much depends on close attention to a great variety of detail, that none but the owner, on the spot, can secure all the natural advantages attending the actual possession of a snug farm. What can a distant owner of large tracts make of the eggs and of the poultry, the small fruits and vegetables, and a thousand other little matters, that are a source of profit to the man in possession?

Look to the more important products of the farm also, and note the difference between the large and the small—the distant and the home fields. The four or five hundred aker farmer must cart his manure to *distant* places—he must bring his hay, his corn, his grain, and his fruits, from distant lots to store them—his laborers must travel to a distance before they can begin—the journey must be doubled at noon, and time must be given to return at night.

But the snug farmer of a few akers may have them all near by him. If he hires laborers, he can see them from his *study windows*, should he find it necessary to be in his study while his men are out. His whole farm is seen at a glance, and his farm stock stand but little chance of enjoying themselves long, in a field of corn or oats, should they chance to break into one.

In Great Britain the lands are owned by a few people, and

*[This has been tried. Two or three barrels of potatoes of spontaneous growth were taken from Brazil to England by order of an English nobleman, and planted, and the rot prevailed among their produce to a very considerable extent.]

the number of owners is diminishing from year to year. We are told that in Ireland, thousands and thousands of akers have been lying common and unproductive, while laborers have nothing to do. This state of things cannot long exist, if there remains a spark of real patriotism in the government. A rule should be established that land-owners must improve the soil or suffer others to take it who will improve it. "Those miserable husbandmen should be turned out and others should take their place."

In regard to fruit trees, it is a real shame that our farmers cannot supply themselves and have the most important fruits for their families through the year. How many families have we who have good apples for half the season? We can live long on sweet apples and milk, should our grain crops totally fail us—*provided always that we lay up the apples in store*, and pay attention to cows.

In some seasons corn is cut off. In others, English grain. And some are unfavorable for roots and fruits. We should take care to try for a variety and not depend upon a single kind, as the masses do in Ireland. They have but one article to depend on, and when that is cut off they starve.

Undoubtedly, there is danger of running to the opposite extreme, and getting farms too small for the highest public advantage. There is no general, or fixed rule that will apply to all cases and circumstances. As much depends on the character of the farmer, as that of the soil he cultivates.

Genesee Farmer.

Watering House Plants. — There is a great deal of discretion to be used in watering plants. The regular course of giving them all a regular forenoon and afternoon *dab* is the worst possible policy. The roots of a well-established plant penetrate and fill the entire earth of the pot, and by the usual process of giving a little water every day only keeps the surface wet and the bottom of the roots around dry and molded. The true course is, to let them stand till quite dry on the surface, and then to give them a thorough watering even till it percolates through the bottom, if the pot is well drained with broken earthen or oyster shells. Occasional liquid manure, or one pound of guano in two gallons of water, tells well on the growth and increased size and beauty of the foliage of flowers.—*Genesee Farmer.*

FROST BLIGHT.

Friend Barry: — In answer to your inquiries relative to the pear tree blight, and what varieties with me have been most liable to be attacked with this disease, I reply in brief that my experience in the matter has been quite limited. After a residence here of forty years, and having been for many years somewhat extensively engaged in growing the pear, the sum total of all the trees in my grounds, that have been affected with the disease is only six.

Some eight years since, early in summer, I discovered in one of the nursery rows three trees whose leaves and branches had become withered and turned quite black. I cut them down close to the ground, and burnt them. This variety was the Winter Bell, of but one year's growth from the bud, and had made a very vigorous growth the year previous. My present impression is that it was a clear case of *frozen sap blight*. The other cases have been among standard trees, of which I have a very large number. The Belle de Bruxelles, a tree some ten feet high was attacked, nearly one half of the upper branches turned black. I cut it down to within two feet of the ground, far below where it showed any effects of the disease. It again sprouted and flung up strong shoots, but no symptoms of the disease has since appeared.

A large tree, planted about thirty-five years ago, some six years since exhibited signs of this disease in the upper branches. They were cut out; but nearly every year since some of the branches have withered; the main trunk of the tree at last became effected, and the past year it was cut down to the ground.

Three years ago last autumn, a very large tree of the Orange Pear suddenly began to wither and droop. The leaves did not turn black, but merely drooped as when suffering from drouth. It was not very dry at the time; the tree was near forty feet high, and the roots had spread wide and deep. During the fall the tree appeared to revive; and in the following spring it put out as fresh as ever, and, as I then supposed, healthy and vigorous. But early in June the leaves and branches suddenly turned black, and the whole tree, roots and branches, died at once. The inner bark of the trunk and branches was quite black, and very readily removed from the wood.

Without farther experience and investigotion, I am not disposed now to give an opinion in regard to the cause or causes producing this disease. Yet I am disposed, even now, to hazard the opinion that the last named case was not a case of frozen sap blight. Respectfully yours, B. Hodge.

Buffalo Nursery, March 11, '47.— *Genesee Farmer.*

CLOVER AMONG CORN.

Messrs. Editors: — I have just witnessed the following management of corn land, which appears about the best that can be adopted, as it secures a rotation of crops peculiarly suitable to the growth of wheat, affording additional pasturage for the dairy, of all others the best and the most reasonable; and increasing the mowing land on a farm, to an extent that must add immensely to its winter resources. The mode of arrangement is as follows:

On a very fine farm in the neighborhood of Columbus, New Jersey, the proprietor sowed amongst his corn the last year, at the time of the last cleaning of the crop, red clover broadcast, affording a full allowance of seed; and it is worthy of remark, its present appearance is fine, beyond comparison; the land so clean, and the plants so thick. In early spring, the young crop was dressed with plaster, and it is the intention of the owner to feed off the crop with his dairy cows, keeping them on, until the mowing land affords a bite; after being cleared of its first crop of hay, when they will be removed; the second growth of clover, with the refuse of the first, being afterwards carefully turned under by the Prouty plow, for wheat. By that time, the corn stubs will be so decayed and trodden down and mixed with the droppings of the cattle, as to form no impediment to the working of the plow; and to this highly manured and compost seed-bed, it is his intention to sow wheat after a shallow furrow, the first days of September, with, there is no question, the best prospect of success. Now, although it is customary to sow wheat after corn, it is acknowledged to be a bad practice, as "grain ought not to follow grain;" this, and the late season for sowing, rendering the results peculiarly uncertain, and often times unsatisfactory and unprofitable. The question, therefore, has often been asked, (the growth of oats being generally troublesome and uncertain in yield) "what crop could be substituted, which would derive benefit from the fallow process of the growth of corn, and afford it to the following crop in rotation?" which is here, in my opinion, fully answered. At the same time, if the corn was cut close to the land, the first crop of clover *might* be cut and made into hay, the second growth being devoted to manuring the wheat crop by turning it under; but in this case, it would be desirable that the young clover should be dressed with compost very early in the spring—the best mode, I am inclined to believe, of expending our means of manuring, even on the largest scale; as I too, am an advocate for surface dressing. W. D.

Burlington, N. J., April, 1847.—*Bost. Cult.*

Agricultural Schools and Model Farms. — The New York True Sun, states that a new system of education for the rising generation very essentially differing from all the old fashioned college and academic tuition, has now become an object of deep interest among our most enlightened citizens. The American Institute is exerting all its influence for that object, and so are citizens everywhere of the most respectable character for virtue and wisdom.

The grand object is to combine sound instruction in all useful knowledge with actual daily labor in agriculture and gardening, in order that our young men shall acquire robust health, with the real ability to enter upon active life, with the capacity at once to earn an independent living; and at the same time be qualified to serve the republic in any or all of its civil or military departments The plan of this educational institution is similar to one of a similar nature ad-

vocated recently by Lord Morpeth in York, England, and mentioned in a late number of the Transcript—the establishment of a "Yeoman's School" as his lordship called it, for the encouragement of agricultural pursuits, and the improvement of the people in physical strength, as well as knowledge and virtue. We trust that the American Institute may most abundantly succeed in the great work for which it is now exerting its influence. The practical operations of husbandry furnish ample materials for inquiry and reflection, and serve eminently to bring forth the determined energies of active minds. Prof. Faraday, one of the best chemists in England, made his own way from humble walks to his present position, and a school of agriculture in connection with the mechanic arts, would doubtless soon show many an American mind accumulating a mass of intelligence, which shall prepare the thoughtful laborer to take rank with the chemist and philosopher both in the laboratory and the closet.—*Selected.*

NESTS THAT HENS DO NOT ROOST IN.

BY HON. A. BRONSON.

Messrs. Editors:—Nearly two years since I saw in your valuable paper an inquiry for a mode of making nests for hens, in which they would not roost; and having suffered great inconvenience and trouble from their constant habit of doing so, in nests of the ordinary kind, I set my wits to work to invent a nest that would avoid the evil; and having completely succeeded, I suppose that according to *your* law, i. e. that each one who profits by the improvements of others should, in return for the benefit, make known his own improvements, I must make it known. But though I have succeeded to my own entire satisfaction, I strongly suspect the plan will not be entitled to a *patent*, because it is so simple that it seems as if others must have adopted it long ago; and I am astonished at myself that I never thought of it before; but such as it is you shall have it.

I made a platform of boards about two feet from the ground-floor of my hen-house, twenty inches wide, across one end of the house. I then prepared a board one foot wide to place upright six inches from the front edge of this platform, in which, at eighteen inches from centre to centre, I sawed out openings or doors five inches wide and seven inches deep from the top or upper edge, leaving five inches of board below these doors to keep in the straw of which the nest is composed. Between these doors, midway, I nailed pieces of board fourteen inches long and twelve inches wide, for partitions between the nests. I placed this upright board six inches from the front edge of the platform, which of course run the partition boards back to the wall. On the top of this I placed another platform of the same width of first for a covering to the first row of nests, and a floor to the second row. I now had one row of nests, eighteen inches by fourteen, and one foot high; and continued to add one row upon another in the same way to the fourth.

In each of these boxes or pigeon holes I placed straw or hay enough for a good nest. The five inches of board under the door proved sufficient to keep the straw in place. Each nest-hole had a porch six inches wide before its door, upon which the hens can walk at leisure, and if the first nest is pre-occupied, hop on to the next, and so on till she finds an empty one; and if the first story is all occupied she can go to the next, and the next, up to the fourth story, by a slight effort of her wings.

It is said that hens prefer dark places to lay in, and therefore these places suit them; and when on the nest they invariably turn their heads to the doors, and if others attempt to come in, or encroach upon their retirement, a blow from their beaks would ward the intruder off; though from the want of a sufficient *number* of nests to accommodate *all* my hens at once, they would sometimes fight their way in, and two would sometimes be found in the same nest, but always having a quarrel about it. I have thought the plan, therefore, might be improved, and which I intend to do when I build a new house for them, by making the apartments for the nests about one foot square, and the same in height, or a cubic foot, and then the second hen could hardly crowd in if the nest was occupied. But the best way to keep them from crowding, and consequently quarrelling about it, is to have nests for all.

In these nests the great desideratum is gained, for in near two year's experience with them I have never known a single hen to roost in the nest.

These nests have proved very good to set hens in. You can place a small board up at the door of a setting hen's nest, if others encroach upon her and lay fresh eggs, giving her an opportunity to leave once a day, as is usual, for refreshments. And these nests are also very convenient to take eggs from at any time you please. If the upper story should be too high to reach handily, then place something to stand upon. The entire sides and ends of the hen house can be boxed up with these nests, except at the doors and windows, while the space in the middle of the room furnishes room enough for roosts.—*Prairie Farmer.*

Prairie du Chien, Wis., March, 1847.

The Woodpecker.—In more than fifty orchards which I have myself carefully examined, those trees which were marked by the woodpecker (for some trees they never touch, perhaps because not penetrated by insects) were uniformly the most thriving, and seemingly the most productive; many of these were upwards of sixty years old, their trunks completely covered with holes, while the branches were broad, luxuriant, and loaded with fruit. Of decayed trees, more than three-fourths were untouched by the Woodpecker. Several intelligent farmers with whom I have conversed, candidly acknowledge the truth of these observations, and with justice look upon these birds as beneficial; but the most common opinion is, that they bore the trees to suck the sap, and so destroy its vegetation; though pine and other resinous trees, on the juices of which it is not pretended they feed, are often found equally perforated. Were the sap of the tree their object, the sacharine juice of the birch, the sugar maple, and several others, would be much more inviting, because more sweet and nourishing, than that of either the pear or apple tree; but I have not observed one mark on the former, for ten thousand that may be seen on the latter. Besides, the early part of spring is the season when the sap flows most abundantly; whereas, it is only during the months of September, October, and November, that woodpeckers are seen so indefatigably engaged in orchards, probing every crack and crevice, boring through the bark, and, what is worth remarking, chiefly on the south and south-west sides of the tree, for the eggs and larvæ deposited there by the countless swarms of summer insects. These, if suffered to remain, would prey upon the very vitals, if I may so express it, of the tree, and in the succeeding summer give birth to myriads more of their race, equally destructive.

Here, then, is a whole species, I may say, genus of birds, which Providence seems to have formed for the protection of our fruit and forest trees from the ravages of vermin which every day destroy millions of those noxious insects that would otherwise blast the hopes of the husbandman, and which even promote the the fertitity of the trees; and, in return, are proscribed by those who ought to have been their protectors, and incitements and rewards held out for their destruction! Let us examine better into the operations of nature, very many of our mistaken opinions and groundless prejudices will be abandoned for more just, enlarged, and humane modes of thinking.—*Wilson's Ornithology.*

Destruction of Weeds.—All rank weeds or coarse vegetables that grow spontaneously to the detriment of other plants, should be timely destroyed before they mature their seeds. Perennials, such as docks, thistles, dandelion, &c., are the most difficult to exterminate, as they generally strike very deep root. The best and surest method of destroying these, is, to bring them to the surface with the plow or spade, or to pluck them out, root and branch, by hand, and burn, or give them to swine. Fields or gardens, that are much overrun with perennial weeds may be rendered clean in a few years, by thickly cultivating them with horse radish, lucerne, or other tap-rooted plants, which will retard their growth, and finally root them out.

Annual weeds, which can only be propagated by seeds, such as spurry, chickweed, charlock, stramonium, &c., are most readily extirpated by repeatedly hoeing or raking over the surface of the ground, so as to expose their roots to the

influence of a hot sun. The main point, in all kinds of weeds, is to prevent them from running to seed.

All nooks and corners about buildings, as well as paths and gravel walks, may be kept perfectly free from weeds by strewing upon the surface of the soil a layer of common salt, or a combination of fifteen parts of sulphur with one part of lime.—*American Agriculturist.*

TIME TO SOW GRASS SEED.—As there is and has been a good deal said about the time of sowing grass seed, I will give you my ideas on the subject. Some say sow the last of February or first of March; but I say not—and why? because if sown with wheat, it will die when the wheat is harvested, and if you sow on stubble you will lose the use of the ground. In the spring of 1845 I sowed thirty-five akers, a part in February and the other in March. The seed caught well and looked finely until harvest; after which it commenced to wilt, and finally died—the change, from the protection of the wheat, to sudden and entire exposure to the sun, (which I suppose you know is heavily charged with heat about those days,) being too much for it. The time that I should recommend would be the last of August or first of September. About the 20th of August 1845 I sowed a border around the field that I seeded in March. I gave the ground a thorough harrowing, put on my seed, and then rolled it. I got a good crop of grass from it last year, and tried the same plan on two different pieces last year, and with a common season I shall get a good crop. I have as yet confined myself to timothy; but intend to try clover this winter.

A. SUBSCRIBER.
Prairie Farmer.

SLAUGHTERING ANIMALS.—Animals, before being slaughtered, should be allowed to fast for something like twenty-four hours, in order that the stomach and bowels may become empty. This is particularly true of sheep or horned cattle, or in fact any animal that ruminates, as such animals retain their food longer than others.

The meat of an animal butchered while the stomach is full, is much more liable to putrify in warm weather than that killed in proper condition: hence this rule is specially to be regarded at this season of the year.—*Prairie Farmer.*

LIGHTNING RODS.—This season has thus far been one of remarkable electrical activity. We have had several terrific storms of thunder and lightning, and several buildings have been struck in this vicinity, and one or two persons killed.

We again remind our readers that lightning rods are a sure protection, cheap, and easily put up. It is hoped that those who have hitherto neglected the matter will now attend to it.

A rod may be erected as follows: Get round iron 3-16 or 5-8 of an inch, and if the rod is not more than fifty feet long, weld the pieces together and point both ends. The upper end must be plated with silver, gold or platina; or some metal which will not rust—or a silver tip may be obtained which will fit the upper end, and may be slipped on, where it will stay by its own weight. Run the lower end into the well, if it is convenient—if not, dig down to permanent moisture, which may be four feet, or ten—erect the rod by the chimney if possible, and fasten it to the house by pieces of wood. If the house is forty feet long and the rod is in the centre, let it run ten feet above the house—if the latter is twenty feet long, let the rod be elevated five feet. The rod will protect a space equal to twice its length each way from the top of the house. Paint the rod with lampblack and oil.

The silver tips can be obtained in this city, and can be sent by mail to any place.—*Prairie Farmer.*

BREAK THE CRUST.—Every observant farmer must have noticed the crust which forms on the surface of newly stirred soils, after lying a few days to the action of the dews. A much heavier crust is formed by each shower of rain which falls. Good and successful cultivation requires that this newly formed crust be often and repeatedly broken by the hoe, harrow, or other instrument.

A striking instance in proof of the importance of this practice has just been stated by an extensive farmer. He planted a field of broom corn, and by way of banter, told the man who assisted him, that each should choose a row as nearly alike as possible, and each should hoe his row, and the measured amount of crop on each should be the proof which was hoed best. Our informant stated the result in substance as follows: "Determined not to be beaten, I hoed my row well, once a week, the summer through. I had not seen my assistant hoe his at all; but had observed that for a long time he was up in the morning before me. At length I found him before sunrise, hoeing his broom corn, and I asked him how often he hoed it; he answered 'once a day, regularly.' The result of the experiment was, his row beat mine by nearly double the amount."—*Albany Cult.*

CHARCOAL BENEFICIAL TO PEACH TREES.—Mr. Mason Cleaveland, of Hartford, Ct., wishes to make public an experiment made upon a peach tree by an acquaintance of his, the truth of which he says can be depended upon beyond all question—at any rate the experiment is a cheap one, and is worth trying. He had a young peach tree, the leaves of which were turning yellow, and showing other symptoms of decay. My friend, calling to mind the qualities of charcoal, removed the turf and soil, near the roots, in a circle of about two feet in diameter around the tree, and filled the space to a level with the surrounding soil, with fine pieces and dust of charcoal, which remained in the bottom of a box. The result was surprising. The tree put on fine healthy leaves instead of the yellow ones, and all other signs of sickness departed in a wonderfully short space of time. The tree again commenced growing, and remained perfectly healthy until some years after, when it was destroyed by the weight of its crop of fruit assisted by a strong wind. It is worthy of note that its fruit, both in quality and size, was as much improved as the appearance of the tree itself.

American Agriculturist.

THE INFLUENCE OF HORTICULTURE UPON HUMAN CHARACTER.—That the habitual association with interesting plants and flowers exerts a salutary influence on the human character, is a truth universally felt and understood. No one ever dreams of any possibility of mistake, in estimating the disposition of those who delight in gardens, rural walks, and arbors, and the culture of elegant shade trees and shrubbery. Whoever anticipated boorish rudeness, or met with incivility, among the enthusiastic votaries of Flora? Was it ever known that a rural residence, tastefully planned and appropriately adorned with floral beauties, was not the abode of refinement and intelligence? Even the scanty display of blossoms in a window, or of the careful training of a honeysuckle round a cottage door, is an unmistakable evidence of gentle spirits and an improved humanity within. There may, possibly, be natures so gross, as to be incapable of perceiving the beauties of the vegetable creation—and others inaccessible to the influence of genuine taste—as it is said there are persons insensible to the charms of the sweetest music. But I can only imagine the existence of such unfinished specimens of our kind, as the *exceptions* which logicians say are the strongest proofs of the general rule. They must, indeed, be the veriest clods that ever fell untempered from "auld Nature's 'prentice han."

"The man that hath no music in himself,
Nor is not mov'd with concord of sweet sounds,
Is fit for treasons, stratagems, and spoil's."

Dr. Wm. Darlington.

CULTIVATION OF CRANBERRIES ON UPLAND SOILS.—The attention of the public having been called to the culture of this delicious fruit, and Mr. Gardner, of Massachusetts, having produced three hundred and twenty bushels to the aker on upland soil, I proceed to give his mode of cultivation, as follows: "I select a piece of cold wet land that will keep moist through the year—remove the top soil to the depth of two inches; this prevents all grass or weeds from growing, and the plants will require no cultivation after they are set out. After the top was removed, I harrowed the ground smooth and marked it out in drills, eighteen inches a part, and set in the plants four inches apart. Some I set out on

sods fourteen inches square, placed in holes a little below the surface. They all flourished far beyond my expectation: the first year they put forth runners three feet long, and every vine was loaded with fruit. The plants can be set out from September to December, and from April till the last of June. Yours, &c., B. G. BOSWELL.

Farmer's Cabinet.

TO PROTECT CUCUMBERS FROM BUGS.—A correspondent of the Boston Cultivator proposes a novel, and we see no good reason why not, an effectual remedy against the depredations of the common striped bug so destructive to garden vines in their early stages. The writer says, "Yesterday I heard of a new experiment in preventing those yellow bugs from killing our cucumbers and other vines in the spring. Happening to Mr. Holmes' shop, he asked me if I wanted to know what would prevent the bugs from eating my vines this spring. I told him I should be glad to find some antidote, but should not be a full believer until I had proved it. He said a Mr. Besbe last season had his vines eaten up two or three times, and he determined to do something to stop them. He took cotton batting and peeled it off in thin flakes and put it over the plants and a bug could not get near them. The edge of the cotton he covered with earth so that it staid in its place, and his plants grew finely, the cotton being no obstruction to light, heat and air.

We trust some of our readers will try the experiment for themselves, and we have not much doubt of their success.

Farmer and Mechanic.

PLOWING ORCHARDS.—If well done, and the trees not run over nor lacerated, is found to be a difficult work. To make it easy, get a short one-horse whiffle-tree about fifteen inches long, and attach one of the horses by long traces to the plow; fasten the other horse before it, and let them go *tandem*. A careful boy or man rides the forward horse, and another holds the plow. After the intermediate space between the rows has been plowed in the usual manner by horses abreast, as near to the trees as convenience and care will admit, finish the rest with the tandem team, rigged as just stated. The long traces will allow the plow to run as near the trees as is needed, and the short whiffle-tree can scarcely be made to touch a tree. Well tested by experience—*Southern Planter.*

ANOTHER REMEDY FOR THE CURCULIO.—The following which we find in the Cleveland Herald is worthy of trial, though we have not much faith in its efficacy:

A gentleman of the city informs us that a lady of his acquaintance has for several years past practiced hanging one or more bottles, filled with sweetened water or the like, among the branches of her plum trees, and the result has been an abundant supply of both curculios and plums. The curculios are caught in the bottle and the plums left to ripen without suffering from the curculios' usual depredations. Some little attention is necessary to note when the bottles get filled, and then of course they must be emptied and refilled afresh.

The gentleman states that this course has been fully successful; resulting in abundant crops from trees so managed, while others around had their fruit entirely destroyed.

THE PLUM WEVIL.—The Ohio Cultivator details a new method of destroying this little Turkish marauder, which is so simple and natural that it is worth the trial by those who have real choice plums.

He takes tubs or boxes, one for each tree, whitewashes the inside, and places them under the trees, and if they are elevated to near the lower limbs of the tree so much the better. He then pores into them water enough to cover the bottoms an inch or more, and as soon as dusk in the evening sets a lighted candle in each tub or box and suffers it to burn two or three hours. The insects are attracted by the light, and tumble into the water, where they remain.

Insects of all descriptions which infest a garden may be destroyed in great numbers by kindling fires in the garden during the evenings of summer.—*Prairie Farmer.*

TO SPROUT GARDEN SEEDS.—To sprout garden seeds, procure two sods, of equal size, say eighteen inches square; lay one down in the corner of the kitchen chimney, grass down; lay your seeds upon it, if small wrap them in a piece of brown paper; then place the other sod upon them, grass up—water well with warm water, and the seeds will sprout in twenty-four to forty-eight hours.

There is one manifest advantage in sprouting seeds—it tests their goodness, and shows whether they will or will not grow. A small quantity of seed corn, submitted to this test before planting, would in many instances prevent great loss to the farmer.

THE OHIO BUSHEL.—An act of the Ohio Legislature, passed the 8th of February, 1847, fixes the following weights as the standard bushel of the articles named, when sales are made by the bushel, without special agreement between the parties as to the measurement; that is to say:

Wheat,	60	pounds.
Indian corn,	56	"
Barley,	48	"
Oats,	32	"
Rye,	56	"
Flaxseed,	56	"
Clover seed,	64	"

HEN AND CHICKENS.—A writer in this subject—and let no one say it is not an important subject—in the Rochester American, gives the result of his experience in economizing the time of hens; and we think it worthy of being communicated to our readers. All who are familiar with rearing chickens, know that there are very few hens that will allow newly hatched chickens to be committed to their care, when their own are a few days old. This the writer attributes to the fact that the hen has become acquainted with her own chickens, from color, marks, &c., and considers the new comers in the light of intruders, which she too frequently punishes with death. To obviate this, he puts the first hen that hatches into a coop, and keeps her there with her chickens till another hatches, when he substitutes the second hen for the first, leaving the chickens in charge of the former; and when another hatches, she is put in the place of the second, with all three of the broods—if the aggregate number do not exceed thirty—which he says she will take care of affectionately and efficiently.

CRANBERRIES.—James N. Lovell, gives the Barnstable co., (Mass.) Agricultural Society a statement of his mode of cultivating cranberries. He says that in 1834 he set out cranberry vines on what had been a cedar swamp, covered over with beach sand. They have done well and the average yield the past season was a bushel and a half to the square rod, or at the rate of 240 bushels per aker. He kept the lot flooded with water till about the 15th of April each year. For gathering, he gives from one-fourth to one-sixth, according to the abundance of the fruit. He gets two dollars per bushel, the mode of measuring being to give nine half pecks, struck measure, for one bushel. He speaks of a worm which has sometimes attacked his vines, and to destroy which he recommends sowing on them salt or ashes about the middle of July, while wet with dew, at the rate of a bushel to forty rods, or four bushels to the aker.

Boston Cultivator.

INDIAN BATTER CAKES.—A pint of Rich milk, heated, a piece of butter the size of a walnut, eight large table-spoonfuls of sifted Indian meal, three large table-spoonfuls of sifted wheat flour, three eggs, a large tea-spoonful of salæratus, one of salt. Put the butter into the pint of milk, and warm it in a sauce pan; when scalding hot, have ready, in a pan, the Indian meal and flour, well mixed together, and pour the milk upon it. Stir it well, and thin it with a pint of cold milk; beat it until smooth and free from lumps; have ready the eggs, beaten till light, and stir them in, adding the salt and salæratus, (being previously dissolved in buttermilk.) Bake the cakes on a griddle, and butter them hot.

Ohio Cultivator.

Black Nots on Plums.—Whatever be the cause of this disaster, there need be no difference or difficulty with regard to its prevention. Excision and burning of the affected branches has proved completely effectual where promptly and unremittingly applied. Some, indeed, have complained of failure; but in these cases the disease appears to have made great progress before the remedy was applied; or else the operation was not closely followed up on every excessive appearance of the excressences.

Some readers will remember to have seen notices of the efficacy of washing the branches in strong brine. Some instances have lately occurred, where the application of soft soap and salt have been made. The excressences, if recent, soon wither and disappear. It may happen, however, that some parts of the trees or remote branches may be inaccessible, and that excision may prove the easier of the two.

Alb. Cult.

Flowers.—How the universal heart of man blesses flowers! They are wreathed round the cradle, the marriage altar, and the tomb. The Persian in the fair East delights in their perfume, and writes his love in nosegays; while the Indian child of the far west claps his hands with glee, as he gathers the abundant blossoms—the illuminated scriptures of the prairies. The Cupid of the ancient Hindoos tipped his arrows with flowers, and orange buds are the bridal crowns with us, a nation of yesterday. Flowers garlanded the Grecian altar, and they hang in votive wreaths before the Christian shrine. All these are appropriate uses. Flowers should deck the brow of the youthful bride, for they are in themselves a lovely type of marriage. They should twine round the tomb, for their perpetually renewed beauty is a simbol of their resurrection. They should festoon the altar, for their fragrance and their beauty ascend in perpetual worship before the Most High.

Destroying Sorrel.—W. L. V. D., of Lorain county, Ohio, (writing in answer to the inquiries of A. Reynolds, in our April number,) says: "A few years ago I had a piece of land on the river bottom, (so called here,) of a dark sandy loam, so completely overrun with sorrel as to entirely choke out a crop of spring wheat. I plowed the land up as soon as I saw the wheat was destroyed, and sowed it to buckwheat, which completely destroyed the sorrel. There was no more seen for quite a number of years. Hence I believe the above to be an effectual remedy."

Genesee Farmer.

Increase your Manure Heaps.—As soon as your stercoraries and yards are cleaned out, commence replenishing them with materials for the ensuing year. Your hog pens in an especial manner, should be attended to. Hogs, by supplying them with suitable materials, may be made to pay all the expense of their keeping from the time of taking them from their dams, to the day they are brought to the tub. Some who have never carefully experimented in this business, will probably question this assertion; but, friends, throw aside prejudice, and give the matter a fair trial. You will never regret it.—*Maine Cultivator.*

Mode of Purifying Water.—It is not so generally known as it ought to be, that pounded alum possesses the property of purifying water. A table-spoonful of pulverized alum, sprinkled into a hogshead of water, (the water stirred round at the time,) will, after the lapse of a few hours, by precipitating to the bottom the impure particles, so purify it that it will be found to possess nearly all the freshness and cleanness of the finest spring water. A pailful, containing four gallons, may be purified by a single tea-spoonful.

To make Soap without boiling.—Cleanse the grease as usual—have the lye strong and good—then heat the lye to a boiling heat, and pour it into the grease. Give the whole a stirring, and they will unite and form good soap at once. The quantity of lye to be used will be known when the soap is formed—if any grease rises, put in lye till it is all taken up.—*Prairie Farmer.*

Time for Budding Cherry, Plum, and Peach Trees.—Cherry trees and plum trees should generally be budded the first of August, in this climate; or the last of July, if the season be very forward. Peach trees from the first to the middle of September. Much depends on the vigor of the stock. Luxuriant stocks may be budded later than those that grow slowly. Something depends upon the season, as forward or backward, wet or dry, cold or warm. We have given general rules.—*Bost. Cult.*

Warts on Cows Teats.—The troublesome excrescences may be easily removed by applying the following simple remedy: In a quart of soft water, dissolve one-forth of a pound of alum, and in this solution wash the teats and udder, carefully, morning noon and night. Perseverance in this course will in a few days remove every vestige of the disease, leaving the parts formerly affected, smooth and healthy.

Bees.—Bees should not be kept on the south side of a wall or building, but on the north side. If kept on a southern exposure, they will be tempted to leave their hives while the general atmosphere is yet cold, and perish before they can return.—*Prairie Farmer.*

Medicine for Hogs.—The American Farmer furnishes the following: When your hogs get sick, you know not of what, give them ears of corn, first dipped in tar, and then rolled in sulphur. 'Tis ten to one that it arrests the disease and restores the pig to health.

Cement for Grafting.—One part of good beef's tallow, two parts of pure beeswax, and four parts of rosin. Melt all and mix well; then pour into cold water and work very thoroughly, as shoemaker's wax. We have frequently used cement made with these proportions, and it will not melt in hot weather, nor crack in cold weather.—*Exchange paper.*

An Improvement in Bread Making.—Persons who are so unfortunate as to be poorly provided with those agents of mastication, good teeth, will be glad to know that there is a method of baking bread which obviates the necessity of a hard crust. The crust commonly attached to the loaf is not only troublesome to such persons, but is often the cause of much waste. The way to be rid of it is as follows. When the loaves are moulded, and before they are set down to "rise," take a small quantity of clean lard, warm it, and rub it lightly over the loaves. The result will be a crust beautifully soft and tender throughout. This is not guess-work.

Prairie Farmer.

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